IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:	)
	) **Group Art Unit:** 2172
Sashikanth Chandrasekaran, et al.	)
	) **Examiner:** To, Baoquoc N.
Serial No.: 09/265,489	)
	)
Filed: March 9, 1999	)
	)
For: METHOD AND SYSTEM FOR	)
RELIABLE ACCESS OF MESSAGES BY	)
MULTIPLE CONSUMERS	)
	)

DECLARATION OF SASHIKANTH CHANDRASEKARAN AND ASHOK SAXENA
UNDER 37 C.F.R. § 1.131

Assistant Commissioner for Patents

Washington, D.C. 20231

Sir:

We, Sashikanth Chandrasekaran and Ashok Saxena, hereby declare as follows:

1. We are co-inventors of the invention described in the above application.

2. At the time we invented the subject invention, we were employed as software and technology developers at Oracle Corporation.

3. As evidenced by the documents attached to this affidavit as Exhibits A-F, prior to January 15, 1999, we had conceived and diligently reduced to practice the subject matter of

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the above application. Exhibit A is a portion of a Design Specification dated prior to January 15, 1999 which describes the design specification for implementing database tables and related structures for managing message data to be accessed by multiple recipients. Exhibit B is a copy of a driver script which invokes other SQL test scripts. Exhibit C is a copy of a script that was used to create multiple consumers queues based on the subject invention. Exhibit D is copies of scripts that perform operations such as enqueuing and dequeuing of messages, as well as cleanup of the queue tables. Exhibit E is copies of the outputs generated by the test scripts of Exhibits B-D. Exhibit F is copies of documents showing successful tests of the above scripts.

    4. Section 2.2.4 of Exhibit A describes history management processes that are implemented in a software program that was created and reduced to practice prior to January 15, 1999 which embodied the subject matter of the above application. This section discloses history management of information for multiple consumers, where the information includes one or more information records in order from one or more queues. Section 2.2.4 describes the provision of data from information records to consumers, e.g., by de-queuing a message. This section also describes updating a history table which includes records for the consumers. Section 3.4.1 of Exhibit A describes database fields that are employed to manage history information for the processing of messages, as well as procedures for proving to users and updating such information. Specific information to track for history records are also provided in this section. The fields used to manage the history information include at least one field that indicates whether a data item has been provided to a consumer, which is updated when a consumer accesses the information (e.g., by updating the "consumer_name" field with the name of the agent (recipient) that dequeued the message). This database structure was implemented in a software program that was created and reduced to practice prior to January 15, 1999 which embodied the subject matter of the above application. Section 3.4.2 of Exhibit A describes an algorithm to update and manage index records relating to the messages and message recipients. This process was implemented in the software program that was created and reduced to practice prior to January 15, 1999 which embodied the subject matter of the above application. These sections as well as other within Exhibit A such as section 3.4.1 in the discussion regarding "a dequeue index" and in section 3.4.2 in subsection 1 and at Exhibit E, page 16 (marked as page "1" on the bottom) and at Exhibit E, page 2 (marked as page "2" on the bottom), lines 7 and

lines 35-end describe managing information to be accessed by multiple consumers, where the information includes one or more information records, and the information records to be accessed by the multiple consumers are in a specified order, with each information record including data to be accessed by a consumer.

4.   The attached exhibits disclose providing data of an information record to a consumer. For example, Exhibit E, page 9 (marked as "Page 1" on bottom of page) discloses this, particularly at the "sys.message" statement on or around line 15 of the page and Exhibit E, page 10 (marked as "Page 2" on bottom of page), lines 43-end discloses this, particularly at the "Message" statements.

5.   The attached exhibits disclose updating a history table, said history table comprising a history record for said consumer for said information record, said history record comprising a message state field for indicating whether said data of said information record have been provided to said consumer. For example, Exhibit A, section 3.4.1 discloses this in subsections a-k with respect to the discussion of a history index for a queue table and section 3.4.2 in subsection 3 in the discussion of "array insert…" and in Exhibit C, page 3, at or around lines 45-48, with respect to the statement "If hist(i).transaction_id IS NOT NULL…."

6.   The attached exhibits disclose that said updating comprising setting said message state field in a history record corresponding to said consumer to indicate said consumer accessed said data. For example, For example, Exhibit A, section 3.4.1 discloses this in subsections a-k with respect to the discussion of a history index for a queue table and at section 3.4.2 in the discussion regarding "2. Update deq_time…."

7.   The attached exhibits disclose that each said information record further comprises a message identifier value that identifies the data of said information record, and each said history record further comprises a message id field that identifies data in an information record. For example, Exhibit A, section 3.4.1 discloses this in subsection a with respect to the discussion of a history index for a queue table and in Exhibit D, page 3 (marked as "Page 1" on bottom of page) discloses this, particularly at the "dbms_aq.enmqueue() statement on or around line 15 of the page

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relating to "enq_msgid" and at Exhibit D, page 4 (marked as "Page 2" on bottom of page) at lines 26 and 51 with references to the "dbms_aq.dequeue ()" statements.

8.   The attached exhibits disclose that each said history record further comprises a consumer id field that identifies a consumer of said multiple consumers that is to access data in an information record, said data identified by said message id field in said history record, said consumer id field of said history record identifying said history record as corresponding to said consumer. For example, Exhibit A, section 3.4.1 discloses this in subsection e with respect to the discussion of a history index for a queue table and in section 3.4.2 in subsection 3 in the discussion of "array insert…" and in section 3.4.2 in the discussion regarding "2. Update deq_time…." with respect to "r1" and at Exhibit D, page 4 (marked as "Page 2" on bottom of page) at lines 21 and 47 with references to the "deqopt.consumer_name := consumer;" statements Exhibit E, page 13 (marked as "Page 1" on bottom of page) regarding the "dequeue_options.consumer_name := subscriber" statement.

9.   The attached exhibits disclose that updating comprises setting said message state field in the history record with a message id field that identifies said data that said consumer is provided access to and with a consumer id field that identifies said consumer. For example, Exhibit A, section 3.4.1 discloses this in subsection e with respect to the discussion of a history index for a queue table and in section 3.4.2 in subsection 3 in the discussion of "array insert…" and in section 3.4.2 in the discussion regarding "2. Update deq_time…." with respect to "r1" and at Exhibit D, page 4 (marked as "Page 2" on bottom of page) at lines 21 and 47 with references to the "deqopt.consumer_name := consumer;" statements Exhibit E, page 13 (marked as "Page 1" on bottom of page) regarding the "dequeue_options.consumer_name := subscriber" statement.

10.   The attached exhibits disclose storing data to be accessed by a consumer in an information record. For example, Exhibit D, page 3 (marked as "Page 1" on bottom of page) discloses this, particularly at the "dbms_aq.enmqueue() statement on or around line 15 of the page relating to "enq_userdata" and at Exhibit E page 8 (marked as "Page 1" on bottom of page), line 18 regarding the statement "11>…." with respect to the "enq_userdata" element.

11.   The attached exhibits disclose creating a history record for each consumer that is to access said data. For example, Exhibit A, section 3.4.1 discloses this in subsection e with respect to the discussion of a history index for a queue table and in section 3.4.2 in subsection 3 in the discussion of "array insert…"

12.   The attached exhibits disclose setting said message state field in each said history record to indicate said data has not been accessed. For example, Exhibit A, section 3.4.2 discloses this in subsection 3 in the discussion of "array insert…" with respect to the "NULL" elements.

13.   The attached exhibits disclose identifying the data of an information record that a consumer is to be provided access to by order data in a read-order table, said order data indicating a relative order that data in said information records is to be accessed by said multiple consumers. For example, Exhibit A, section 3.4.1 discloses this in the discussion regarding "a dequeue index" and in section 3.4.2 in subsection 1 and at Exhibit E, page 16 (marked as page "1" on the bottom) and at Exhibit E, page 2 (marked as page "2" on the bottom), lines 7 and lines 35-end.

14.   The attached exhibits disclose reading one or more history records of said history table, said one or more history records comprising a history table read. For example, Exhibit A, section 3.4.1 discloses this with respect to the discussion of a history index for a queue table.

15.   The attached exhibits disclose deleting an information record if all the message state fields in all of the history records of said history table read indicate that said data in said information record has been accessed. For example, this is disclosed in Exhibit A, section 3.4.2, last paragraph, regarding removal of messages.

16.   The attached exhibits disclose associating a work list table with said history table, said work list table comprising one or more work entries, each said work entry comprising an identification of data in an information record. For example, this is disclosed in Exhibit A, section 3.4.2, in the discussion relating to a time manager index and the list of time-management activities.

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17.   The attached exhibits disclose adding a work entry to said work list table, said work entry comprising an identification of said data said consumer is provided access to. For example, this is disclosed in Exhibit A, section 3.4.2, in the discussion relating to a time manager index and the list of time-management activities.

18.   The attached exhibits disclose accessing a work entry in said work list table. For example, this is disclosed in Exhibit A, section 3.4.2, in the discussion relating to a time manager index and the list of time-management activities.

19.   The attached exhibits disclose reading one or more history records of said history table, said one or more history records comprising a history table read, said one or more history records comprising said history table read determined by said work entry. For example, this is disclosed in Exhibit A, section 3.4.2, in the discussion relating to a time manager index and the list of time-management activities.

20.   The attached exhibits disclose deleting an information record if all the message state fields in all of the history records of said history table read indicate that said data in said information record has been accessed. For example, this is disclosed in Exhibit A, section 3.4.2, last paragraph, regarding removal of messages.

21.   The attached exhibits disclose results from a system and method that implements batching two or more work entries in said work list table. For example, the disclosure of Exhibit A, section 3.4.2, in the discussion relating to a time manager index and the list of time-management activities was implemented with batching for the test system that produced the results shown in Exhibits E and F.

22.   The attached exhibits disclose reading one or more history records of said history table, said one or more history records determined by said two or more work entries. For example, this is disclosed in Exhibit A, section 3.4.2, in the discussion relating to a time manager index and the list of time-management activities.

23.   The attached exhibits disclose deleting one or more information records. For example, this is disclosed in Exhibit A, section 3.4.2, last paragraph, regarding removal of messages.

24.   The attached exhibits disclose an information queue comprising one or more information queue records. For example, this is disclosed in Exhibit A, section 3.4.1 regarding a queue table.

25.   The attached exhibits disclose each said information queue record comprising information to be accessed by one or more consumers. For example, this is disclosed in Exhibit A, section 3.4.1 regarding a queue table.

26.   The attached exhibits disclose a table separated from said information queue, said table comprising one or more table records, each said table record comprising an identification of said information in an information queue record, each said table record further comprising a consumer identification field comprising an identification of one of said one or more consumers, and a message state field for indicating whether one of the one or more information queue records has been accessed by one of the one or more consumers. For example, Exhibit A, section 3.4.1 discloses this in subsections a-k with respect to the discussion of a history index for a queue table.

27.   The attached exhibits disclose that each information queue record comprises identification of information of an information queue record. For example, Exhibit A, section 3.4.1 discloses this in subsection a with respect to the discussion of a history index for a queue table and in Exhibit D, page 3 (marked as "Page 1" on bottom of page) discloses this, particularly at the "dbms_aq.enmqueue() statement on or around line 15 of the page relating to "enq_msgid".

28.   The attached exhibits disclose a read-order table, said read-order table comprising order data indicating the order that information in said information queue is to be delivered to a consumer. For example, this is disclosed in Exhibit A, section 3.4.2 regarding the discussion of "1. insert one key…".

29.   The attached exhibits disclose that a read-order table comprises one or more records, each said record of said read-order table comprising an identification field that identifies

information in an information queue record, each said record of said read-order table further comprising an enqueue time field that comprises said order data. For example, this is disclosed in Exhibit A, section 3.4.2, regarding the discussion of "1. insert one key…" and regarding "1. Delete its index entry from qt_i."

30.   The attached exhibits disclose a work list table, said work list table comprising one or more work list entries, each said work list entry comprising an identification of information in an information queue record. For example, this is disclosed in Exhibit A, section 3.4.2, in the discussion relating to a time manager index and the list of time-management activities.

31.   The attached exhibits disclose that a work list entry is a record. For example, this is disclosed in Exhibit A, section 3.4.2, in the discussion relating to a time manager index and the list of time-management activities.

32.   The attached exhibits disclose that a work list table comprises one or more work records and each said work list entry is a field in a work record. For example, this is disclosed in Exhibit A, section 3.4.2, in the discussion relating to a time manager index and the list of time-management activities.

33.   The attached exhibits disclose a message queue comprising one or more message queue records, each said one or more message queue records comprising a message and a message identification. For example, this is disclosed in Exhibit A, section 3.4.1 regarding a queue table.

34.   The attached exhibits disclose a history table separated from said message queue comprising one or more history records, each of said one or more history records comprising a message identification, a consumer identification and a message state identification, each said message state identification indicating whether one of the one or more message queue records has been accessed. For example, Exhibit A, section 3.4.1 discloses this in subsections a-k with respect to the discussion of a history index for a queue table.

35. The attached exhibits disclose a work list table separated from said message queue and said history table comprising one or more work list entries, each said work list entry comprising a message identification. For example, this is disclosed in Exhibit A, section 3.4.2, in the discussion relating to a time manager index and the list of time-management activities.

36. The attached exhibits disclose a method for multiple consumers to access information in a non first-in first-out, prescribed order, said information comprising one or more pieces of information, a first piece of information stored in a first location. For example, this is disclosed in Exhibit C, page 2, line 1-10, particularly with respect to the "sort_list" element(s) of the statement(s).

37. The attached exhibits disclose providing access to first piece of information to a first consumer of said multiple consumers; indicating in a second location in a history table that said first consumer has accessed said first piece of information, said history table having a first message state field for indicating whether said first consumer has accessed said first piece of information; providing access to said first piece of information to a second consumer of said multiple consumers; and indicating in a third location in said history table that said second consumer has accessed said first piece of information, said history table having a second message state field for indicating whether said second consumer has accessed said first piece of information. For example, this is disclosed in Exhibit E, page 11, lines 25-end and at page 17, lines 1-24.

38. The attached exhibits disclose that a first location comprises an information entry in a queue of information. For example, this is disclosed in Exhibit E, pages 1-3.

39. The attached exhibits disclose a queue of information comprises one or more information entries, and each said information entry comprises a piece of information to be accessed by one or more of said multiple consumers, each said information entry further comprising an identification of said piece of information in said information entry. For example, this is disclosed in Exhibit E, pages 1-3.

40.   The attached exhibits disclose deleting an entry comprising a first piece of information that a first consumer and a second consumer is provided access to from said queue of information after said first consumer and said second consumer have accessed said first piece of information. For example, this is disclosed in Exhibit A, section 3.4.2, last paragraph, regarding removal of messages.

41.   The attached exhibits disclose for each of one or more consumers, a table comprises a separate table record for each piece of information to be accessed by said consumer. For example, this is disclosed in Exhibit A, section 3.4.1 and section 3.4.2.

42.   The attached exhibits disclose the history table comprises an identification of a first piece of information and an identification of a first consumer. For example, Exhibit A, section 3.4.1 discloses this in subsections a-k with respect to the discussion of a history index for a queue table.

43.   The attached exhibits disclose a history entry in said history table, said history entry comprising an identification of a first piece of information and an identification of a second consumer. For example, Exhibit A, section 3.4.1 discloses this in subsections a-k with respect to the discussion of a history index for a queue table.

44.   The attached exhibits disclose indicating in a location an order in which one or more pieces of information is to be accessed by multiple consumers. For example, this is disclosed in Exhibit C, page 2, line 1-10, particularly with respect to the "sort_list" element(s) of the statement(s).

45.   The subject invention was reduced to practice and tested to verify that it works for its intended purpose prior to January 15, 1999. This is shown by Exhibits B-F which include copies of documents which evidence that the subject invention was tested and found to work for its intended purpose. As noted above, Exhibit B is a copy of a driver script, which invokes the other SQL test scripts. Exhibit C is a copy of a script that was used to create multiple consumers queues based on the subject invention. Exhibit D is copies of scripts that perform operations such as

enqueuing and dequeuing of messages, as well as cleanup of the queue tables. Exhibit E is copies of the outputs generated by the test scripts of Exhibits B-D. Exhibit F shows copies of documents showing successful tests of the above scripts. Regression tests were performed to verify that the operations performed by the test scripts generate the specified output. The documents in Exhibit F are copies of files that display the results of running the tests and demonstrate that the tests ran correctly with the expected results.

46. The documents in Exhibit F contain listing of all the tests that succeeded on a run as well as all the changes made to the database on that run. Each document in Exhibit F contains the results of a short regression after each build and a listing of changes of what other developers have made for that run.

47. The names of the tests of the subject invention include the initials "aq." For example, tkaqbdq2 represents a test that included features of the invention. Other tests that did not include tkaq* in the name of the tests are tests that did not include features of the invention. For example, tkoo* tests did not include the features of the invention.

48. In Exhibit F, the announcement on top of each document shows the success of the tests of the subject invention. The success of each test is shown by the ".suc" suffix. For example, tkaqbdq2.suc on page 1 shows the success of the test named tkaqbdq2, and this test includes features of the invention because it has the initials "aq" in the name. As another example, tkaqrawt.suc shows another successful test having features of the invention. Thus, the announcement on top of each document shows that the short regression demonstrated that the test runs of the invention was a success and worked for its intended purpose.

49. In Exhibit F, the listing of changes including a listing of transactions at the end of each document shows all the changes made to the database for that particular run. For example, pages 1-4 of Exhibit F is a document for a build and test run with all the changes made for that day. As another example, pages 5-6 of Exhibit F is another document for another build and test run with all the changes made for that day.

50.   Each transaction in each document of Exhibit F shows changes made to the database. Each transaction is named by a reference to the developer, and the change(s) the developer made to the database. For example, the first transaction listed on page 1 of Exhibit F is named ntang_bug-733938. The first portion of the transaction name represents the developer who made the changes. In this example, N. Tang performed the changes for this transaction. A fix to the database was performed for bug-733938. This fix is not related to the invention.
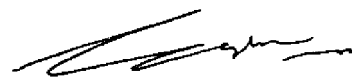
51.   All the references to bugs in Exhibit F are bugs not related to the invention that the developers checked and fixed relating to other features of the project. For example, for the build having the document of pages 1-4 of Exhibit F, Transaction: ykunitom_bug-704908_1 shows that a developer fixed bug-704908 for features unrelated to the invention. The ykunitom_bug-704908_1 does not show a bug as an output of the test script. The ykunitom_bug-704908_1 is transaction for a bug fix for a bug on a feature not related to the invention.

52.   Exhibit F shows that successful tests were performed on the subject invention. All the features relating to the invention ran successfully as shown by tkaq*.suc. Moreover, all the transactions of Exhibit F referencing bugs are bug fixes unrelated to the subject invention.

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53.   We further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: _____ *Feb 23 2009* _____   _____

Sashikanth Chandrasekaran

Date: February 23, 2009

Ashok Saxena